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10 Oct.1962
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UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

Agenda Item:H.2

Finland

HOW TO COPE WITH THE URGENT NEED FOR STATISTICAL SERVICES IN DEVELOPING COUNTRIES

By Leo TORNQVIST,
Professor,
University of Helsinki, Finland

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HOW TO COPE WITH THE URGENT NEED FOR STATISTICAL SERVICES IN DEVELOPING COUNTRIES.

by

Leo Törnqvist, Professor,

University of Helsinki, Finland.

1. The importance of statistical services for developing countries.

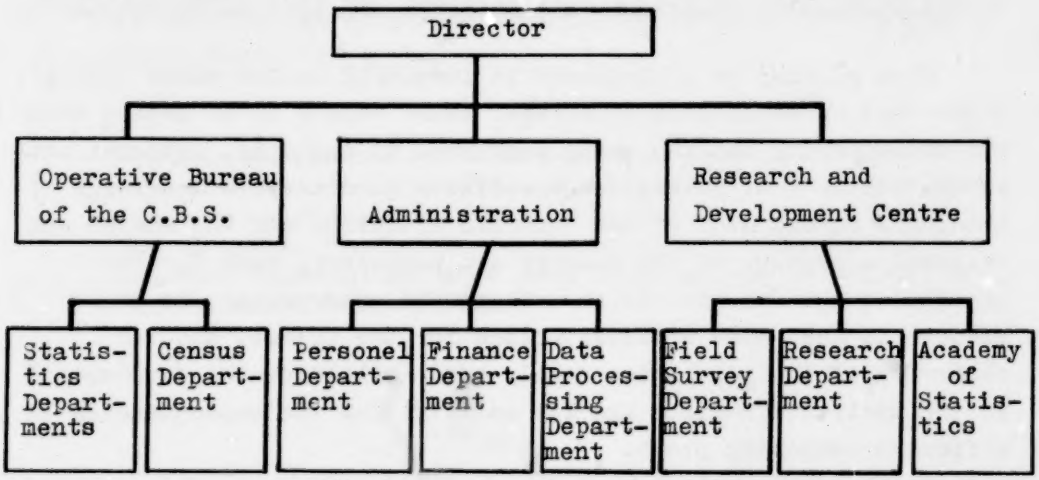
When working as a UN-expert in Indonesia in the years 1960-61, I saw that in developing countries, there really is an urgent need for establishing and improving many kind of economic, cultural and social statistics. Relevant and reliable quantitative knowledge about the development of the economic situation and the social and cultural structure of the country are necessary, both for the government and for the public and private enterprises, in their efforts to make more efficient plans for the future, and for observing if their policies really have influenced the development in the desired direction and for anticipating the consequencies of different competing plans.

To meet this urgent need for statistical information, we must first educate a sufficiently large number of statisticians who can produce the information needed and can correctly interprete the statistical information available. Further, the trained statisticians must be effectively organised to get the new data needed as rapidly as possible. This will require that a statistical research and development centre is built up, in which the best trained statisticians work as a team aiming to function as a dynamic force, doing the hard work to get the new activities started on a sound base and analyzing the results obtained. This centre must also be

responsible for the training of newcomers in the statistical field. During the first five to ten years it will be necessary to get experts from abroad to build up such a centre because the few outstanding statisticians available in these countries are already overloaded with administrative work. These statisticians will need the centre as a brainstrust for working out the "blue prints" of the new activities.

2. The organization plan for the Central Bureau of Statistics in Indonesia.

The following organization chart shows how the Research and Development Centre according to the request approved by U.N. Special Fund has been related to the Central Bureau of Statistics in Indonesia



This type of organization is, I think, a good model also for other countries. It shows the main tasks of a statistical organization for a country. It was developed by a comittee planning how the organization of the Bureau could be strengthened so that it would become an effective tool for producing the statistical information needed.

It can be mentioned that the Data Processing Department has to assist the departments of the Operative Bureau and the Centre. The experts in data processing will also have the duty to teach in the

Academy.

The building of the Centre will require international assistance. The need of foreign experts during the building of the Centre is seen in the following scheme.

Area of specialization, duration and timing of expert assistance.

Statistical Activity	first year	second year	third year	fourth year	fifth year
1. Academy of Statistics	x	x	x	x	x
2. National Income	x	x	x	x	
3. Trade and Industry	x	x	x	x	
4. Agriculture	x	x			
5. Vital Statistics, Labour and Manpower	x	x			
6. Transportation and Communication	x	x			
7. Prices and Finance	x	x	x	x	
8. Field Organization	x	x	x		
9. Data processing	x	x	x	x	
Total number of experts engaged	9	9	6	5	1

The qualification required from the experts is a thorough knowledge in the field of specialization. The senior advisors in statistical studies and research and the expert in national income statistics should have doctorates according to the job descriptions. All the experts will have the duty of contributing to the training programme of the Academy of Statistics.

3. The tasks of the Statistical Research and Development Centre in Indonesia.

The Centre consists of three departments called the Field Sur-

vey Department, the Research Department and the Academy of Statistics. These names refer to the three main tasks of the Centre: 1) To plan how to obtain new data from fields not earlier covered by statistical information. 2) To do research work to find out the useful facts obtainable from existing data and 3) To train new workers in the field who can really do the practical work needed before valuable statistical information can be obtained. It should be kept in mind that a member of the Centre has to make his contribution to solving these three tasks according to his abilities. The big planning projects will require the united efforts of all members. The Centre as a whole will assist the director of the Bureau as a staff for reaching the overall goal of developing the statistical services of the country.

The Field Survey Department has to strengthen the existing field organization for obtaining new statistical data by means of National Sampling Surveys of a type well known in India. The main task of the Research Department will be to develop a National Income Accounting system for the country. Before this task can be done succesfully, many different branches of statistics must be improved. A Census has already been taken in Indonesia in 1961. The results of this Census will form the starting point for demographic research to be done in this department.

The Akademi Ilmu Statistik has been working since 1 October 1958. The aim of the Academy is to provide a three year course in theoretical and practical statistics with such supporting subjects as English, economics, sociology and mathematics, necessary in order to train technical and semi-technical personnel for the development of public administration. The Academy is the only educational institution in the whole of Indonesia giving professional education to statisticians.

4. How to train the statisticians needed.

During my stay in Indonesia, one of my main tasks besides teaching statistics was to establish standards for the requirements for the certificate of merits in statistics and the new academic degrees, Bachelor of Statistics and Bachelor of Science with Honours in Statistics.

Every student of the third year class obtained a certificate

of merits at the end of the obligatory courses. This certificate showed how many lectures were given in the courses attended and the relative standing of the student in the tests of these courses. At most, one third of the students in the class got the highest mark 3, at most one third the weakest mark 1, and the others the medium mark 2. No student was failed because every pupil trained was considered valuable for some kind of statistical work. For the choice of suitable positions for these students such a certificate was considered to be very useful. Most students continued the studies for the Bachelor of Statistics degree after the obligatory courses. For this new degree, it was required that the student prepared and defended a seminar paper and read thoroughly about 1500 pages of statistical textbooks. A standard choice was as follows:
Hald: Statistical Theory with Engineering Applications.
Snedecor: Statistical Methods.
Cochran: Sampling Techniques.
Many variants of this reading course were however possible, depending on the books available in the library, and the interest of the student. Variety was considered to be useful for obtaining statisticians with different special knowledges. A good library in statistics must be built up to make it possible for the statisticians to obtain such further information which might be necessary in different applications.

The requirements for the Bachelor of Statistics degree corresponds to at least 2/3 of the efforts required in the University of Helsinki for a Master of Social Sciences majoring in statistics (laudatur). The full course for a Master degree would still require in Helsinki a master thesis (about 50-80 pages) and further reading of advanced or special books of about 1000 pages.

The students were given an opportunity every month to sit for B.St. examination. To pass the examination 50% of the maximum credits obtainable in the tests was required. After the written examination an oral examination was held. Sometimes students on the boarder line of failing were given six exercises to be solved as home work before they were accepted for the oral examination.

Students with more than 75% of the maximum credits in the written test and who had written good seminar papers and performed well in the oral examination were given the honour remark: Magna Cum laude. The "laudatur in statistics" is reserved for bachelors

of statistics who continue their studies for Bachelor of Science, with honours in Statistics or a master degree.

My experience in attemping to produce good statisticians speaks for a system of education, where the time is about evenly divided into three parts: Hearing lectures, Reading books and Doing exercises or performing research tasks. These means of learning should be used at every stage of the development towards a degree. At the beginning, the lectures play a relatively larger role than in the later stages when reading literature and research tasks become the main tools. The lectures and seminars should put their main efforts into making the students interested in the subject, researchminded, and aware of the high quality requirements on reliable statistical information to be produced.

The students should become selfcritical and obtain the habit of trying to estimate the probability that a statement made is wrong. They have to learn to think systematically and constructively. Without being succesful in developing their minds in this direction, the pupils will not master statistics and become really useful for improving and enlarging the production of statistical information needed. We have thus to remember that it is not enough that the new statisticians have a sufficiently wide knowledge of statistics. They must also become quality minded and accept the ethos of science before good results of the training process can be expected in the long run. The students should be encouraged to teach their assistants the basic elements of statistical thinking and learn how to train others who have not been taught statistics in the Academy.

The weaker the intellectual capabilities of the students are, the more time they need for exercises and reading. To fulfill satisfactorily the requirements for a "Bachelor of Statistics" degree, the weaker students will need almost one year longer than the brightest students who usually have already at the start a better command of English and Mathematics. Some of the students will allways be too weak to be able to reach a degree in a reasonable period of time, but, if they have got a sufficient amount of training in basic statistical work, they may, nevertheless, be very useful in a statistical organization and deserve to get a certificate telling the employer how well they have performed. The certificates of merits should show their relative standing in the class.

The brightest students must be considered as the most valuable

assets for building up an effective statistical service organization for the country. It will pay off to encourage them to continue their studies up to the upper limit of their potentialities. If the teaching staff of the Academy had one fully competent professor in charge of the further education of the Bachelors of Statistics, it would be possible to prepare them well before they go abroad for postgraduate work on Ph.D. level. It must be considered as a goal for all statistically less developed countries to have competent professors in statistics of their own, who can take over the main responsibility for making their countries well developed in the field of statistics. A country well developed in the statistical field has, in my opinion, good chances of making rapid progress also in other fields needing planned efforts.

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SUMMARY

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By Leo TÖRNQVIST, Professor,
University of Helsinki,
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by

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Summary.

When working as UN-expert in Indonesia in the years 1960-61, I saw that in developing countries there really was an urgent need for establishing and improving many kinds of economic, cultural and social statistics. Relevant and reliable quantitative knowledge about the development of the economic situation and the social and cultural structure of the country are necessary both for the government and for the public and private enterprises in their efforts to make more efficient plans for the future and for observing if their policies really have influenced the development in the desired direction and for anticipating the consequences of different competing plans.

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Corresponding to these three main tasks, such a statistical research and development Centre should contain three departments: a Field Survey Department, a Research Department and a Statistical Academy.

My experience in attempts to produce good statisticians speaks for a system of education, where the time is about evenly divided into three parts: Hearing lectures, Reading books, and Doing exercises or performing research tasks. These means of learning should be used at every stage of the development towards a degree. In the beginning the lectures play a relatively larger role than at the later stages when reading literature and research tasks become the main tools. The lectures and seminars should put the main efforts in making the students interested in the subject, researchminded, and aware of the high quality requirements on reliable statistical information to be produced.

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The brightest students must be considered as the most valuable assets for building up an effective statistical service organization for the country. It will pay off to encourage them to continue their studies up to the upper limit of their potentialities. If the teaching staff of the Academy had one fully competent professor in charge of the further education of the Bachelors of Statistics it would be possible to prepare them well before they go abroad for postgraduate work on Ph.D. level. It must be considered as a goal for all statistically less developed countries to have competent professors in statistics of their own who can take over the main responsibility for making their countries well developed in the field of statistics. A country well developed in the statistical field has, in my opinion, good chances of making rapid progress also in other fields needing planned efforts.

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Agenda Item: H

Hungary

THE PROBLEMS OF PLANNING ECONOMIC GROWTH IN THE DEVELOPING COUNTRIES

By Dr. József BOGNÁR,
University Professor,
Budapest, Hungary

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The Problems of Planning Economic Growth in the Developing Countries

by Dr.JÓZSEF BOGNÁR
University Professor
Budapest, Hungary

1. Having won their national independence, the developing countries must proceed to establish the conditions for their economic growth. In so doing they strive to determine the aims and secure the means of their economic growth, in other words to plan their economic activities.

The object of all economic planning is to achieve the concentration and coherent utilization of the physical and intellectual resources in the given economy, so as to enable a rapid growth to take place that fully or almost satisfies the requirement of a dynamic equilibrium.

2. Such a definition of the aim of planning also implies that we consider the problem of growth to be fundamental in these countries, and hold that it is more important to get away from stagnation, than to have statical equilibrium within a short period.

3. The economic /endogenous/ factors however, are in practice interwined with various political and social /exogenous/ problems.

The so-called "pure economic approach" now belongs to the past even in the western countries, and several outstanding scholars - ranging from Gunnar Myrdal to Paul A. Samuelson - have recognized and stressed the importance of the political and social factors.

4. Nevertheless I would like at this juncture to refer, though only with laconic terseness, to the fact that these countries with their one-sided /frequently monocultural/ food and raw material-producing economies must, as pre-conditions of their development,

a/ eliminate or gradually liquidate the social conditions responsible for many centuries of stagnation that have been fostered by the colonizers /pre-feudalism, feudalism, the cast system, tribal systems, etc./,

b/ deliberately construct a social and economic system that promotes the equitable distribution of goods, the establishment of economic and social equality, moreover the free development of the abilities of the individuals living and acting within that community - one, in general, that will both socially and economically set the society into motion, from a static towards a dynamic condition.

5. If, on the other hand, circumstances amid which the productivity of labour plays a decisive part are not brought about, then stagnation will continue, for pieces of initiative that are correct from the "purely economic point of view" then enter into a medium /of a subsistence economy, a tribal organization, feudal estates, etc./ where they are not able to arouse healthy patterns of response.

6. It logically follows therefore from what has been said, that

the trend and rate of economic progress cannot be determined by private profit, and that the social /State/ sector of the economy must - by degrees - acquire a dominant role in development.

7. Only the new State power has the concrete ability to concentrate the available forces, to integrate the social and economic factors, to secure the more equitable distribution of goods and to establish equal opportunities.

The new, generally national democratic State power was born in the struggle against colonialism and has developed after the achievement of independence.

The new State, in so far as it strives to concentrate intellectual and material resources, must be centralized and must oppose tribal particularism.

The new State, in so far as it strives gradually to lessen economic dependence and to establish the economic conditions for independence, must be of an anti-colonialist character and must oppose all neo-colonialist trends.

8. The responsibility of the leaders of the new State is inestimably great and their tasks are highly complex.

9. Some economists are in the habit - by way of analogy - of comparing the function of the new States with that of the "oppressor state" which played an eminent role in the primitive accumulation of capital.

The similarity, however, is only formal, for in respect to content two basic differences must be noted.

The task of the oppressor state was to ensure privileges for the rich against the poor, since the primitive accumulation of capital could only take place under such circumstances.

The historic task of the State organization being evolved in the newly independent countries on the other hand, is to carry out democratic reforms of revolutionary content that will establish the conditions for economic growth, and gradually to liquidate social inequalities.

The oppressor state, moreover, had to use the might and authority of its power to defend economically evolved conditions, while the governments of the newly independent countries must construct an economic system whose outlines have not yet been spontaneously evolved.

10. The planning of economic development and the realization of the flexibly administered plans meets with grave difficulties in the developing countries. I would here refer only to the most decisive ones among them:

a/ The inadequacy or lack of planning staffs and their relatively little experience. /There are of course exceptions in this respect, such as India for example, which is carrying out its third five-year plan and has many excellent economists and statisticians./

b/ The uncertainty or lack of statistical data. It is common knowledge that many countries have no reliable demographic figures, have never yet had a full industrial census and have no dependable statistics on their crop areas.

c/ The relatively broad scope of subsistence economy makes it very much more difficult to survey economic processes. In several

countries the systematic geological mapping of natural resources has not even begun.

d/ The apparatus concerned with the operative execution of the plans and with organizing the elaboration of regulations to promote the fulfillment of the plan /financial, price, industrial policy and foreign trading policy decisions/, does not have as many experts as are necessary for these tasks.

11.Under such circumstances the question arises, of whether it is worth while and realistic to prepare a development plan.

In my opinion - an opinion formulated on the grounds of theoretical and practical considerations - the preparation of development plans is correct and necessary even under such conditions.

It may be possible to do without planning, but it is not possible to avoid taking economic decisions. This statement means that the administration is bound each day to adopt an attitude, to take the initiative and carry out changes, over a number of economic problems, in fact generally to make decisions. It is to be presumed that these decisions will be substantially better in possession of a coherent conception of economic policies - a plan is just such a conception expressed in figures and targets - than without one. Due to the deficiencies of the available facts and the lack of experience of the planning staffs, larger margins of error will be involved than in other countries. Deficient figures and inexperience, however, only make it more difficult, but not impossible to formulate a correct conception of economic policies. The margins of error arising from the lack of a comprehensive conception of economic policies at the level of Government decisions are greater than those due to the uncertainty of the figures and the inexperience of planning staffs.

12.Finally it should also be noted that the development plan is itself an organizing force which promotes the conscious economic activity of those social groups whose behaviour was previously shaped only by tradition and habit.

13.It is on the basis of these considerations that it appears apposite to prepare development plans even in those cases where some of the social and economic pre-conditions of planning /a strong, centralized State power, key positions in the hands of the State, etc./, or its institutional requirements /apparatus for planning and carrying out the plans/ have not yet been brought about completely.

14.The planning practice of the developing countries has mainly adopted medium-range plans /of 3-7 years/. This practice is understandable and correct, since it is necessary to foresee and influence economic events over a period of at least this length for the plan to be more than a mere arrangement of existing factors and resources in the interest of an equilibrium. On the other hand an interval of this duration is sufficient for the effects of the economic factors that are set in motion by the fulfillment of the tasks in the plan, to be propagated like chain-reactions through the country's economic life.

For example the time requirement of most investments lies within the medium range, so that the constellation brought about by the operation of the new establishment is evolved in the course of the period.

15. However, it is also sound practice in the developing countries - once the initial difficulties involved in planning have been overcome - to prepare not only the "tactical plans" of economic development but also the "strategic plans". In this respect I consider the Indian practice of elaborating not only five-year plans but also 25-30 year plans - in pursuit of the principle of continuous and long-range planning - to be a very correct one.

16 The methods of long-range planning are now being perfected, for it is general knowledge that the Socialist countries are at present engaged in preparing 20-year plans, and the rich experiences gained in this respect will shortly be available to all countries. Once the long-range plans have been elaborated, the medium-range plans may be regarded as stations or phases of the long-range ones. The preparation of the "strategic plans" of economic development is especially important in the developing countries, for these have yet to traverse a long road to emerge from poverty and build up a modern economy.

17. It must also be born in mind that in the developing countries a larger part is played by those economic and social factors whose effect is felt with the greatest force over a long period of time. One such factor is that of population, since all the consequences of the trend of growth do not develop fully within a medium-range period. /The natural increase, the age-distribution of the population, the percentage of the population in the working age-groups, etc./

18. At the same time the elimination and liquidation of the factors - caused or reinforced by colonialism but by now appearing as internal features - that impede the construction of a modern economy, also requires a gradual yet consistent approach, involving a long-term view and a corresponding program. Of decisive significance in the elaboration of this program is the integration of economic and social factors.

19. If the decisive task of the development plan is to set the economy in motion from a static, towards a dynamic condition, then obviously the measure of success is the extent and character of economic growth. Growth, however, can according to the statical approach objectively never be balanced. In most of the countries industry is still of an extractive character, agriculture is one-sided /frequently monocultural/, imports must be increased because of the investments effected, the production of consumers' goods cannot keep pace with the rapid growth of the population, the opportunities for internal accumulation are limited, foreign firms take a large part of their profits out of the country.

20. On the other hand stable economic policies can obviously not be based on a prolonged lack of equilibrium. Not to mention the fact that such economic policies would necessarily lead to political dependence. It hence follows that the "growth pattern", the "development criteria" of the economy must be chosen in such a way that the fulfillment of the planned targets will bring it closer to a dynamic equilibrium. In other words this means that in the course of the consideration of every economic decision it is necessary to weigh up the expected changes with time in the dynamic equilibrium that would result from the adoption of a particular variant. Beside the types of equilibrium familiar from both economic literature and practice /a balanced budget, a balance of payments, the equilibrium of the commodity fund and purchasing power/, particular attention must be

devoted to those factors of which there is a shortage, because these may not be disproportionately engaged for any single task /e.g. in the case of highly qualified manpower/, or kept tied down for a disproportionately long time /e.g. financial resources in the event of investments with very slow amortization rates/. Every economic equilibrium necessitates a compromise between mutually contradictory requirements. For this reason the relation of the various factors to one another - considered in motion - is at least as important as the intrinsic content of the factors /or measures/ themselves.

21. For example a cut in the import of consumers' goods has a favourable effect on the development of the balance of payments but decreases State revenues and the opportunity to concentrate accumulation, diminishes the purchasing power of the country's money and hinders the encouragement of the population to expand output and commodity production - a feature of quite extraordinary significance in the developing countries. These facts do not mean that the import of consumers' goods may never be cut, but they do imply a warning that the conception of economic policies manifested in austerity programs cannot be made the basis of growth.

22. The requirement of a dynamic equilibrium means that a type of growth must be chosen which does not cause great and prolonged disturbances of the equilibrium. While stressing the decisive importance of the transition from a static to a dynamic condition, it should nevertheless be pointed out that the dynamic sensitivity of developing economies is very great. An economy in the vegetative sense, can put up with disorders lasting a considerable time - many practical examples testify to the fact - but a break in the surge of growth, or a relapse, may be almost fatal for the whole process of development. In this case there are no accumulated reserves available, to give a new impetus to development. The political and social consequences of a possible relapse can also not be neglected since exuberant self-confidence can well give way to desperation.

23. The opportunities for accumulation are in the overwhelming part of the developing countries very limited. Nevertheless the example of India shows that a well-considered set of economic policies can lead to the raising of the proportion of accumulation /capital formation/ in the national income, from each five-year plan to the next. At the same time the country also needs foreign credits to be able to achieve an annual five percent rise in the national income.

24. India's situation, however, is in many respects better than that of the African countries that have won their freedom in recent years or are now about to do so. In these African countries the overwhelming part of the extractive industries is in the hands of foreign capital, while a considerable part of agriculture serves a subsistence economy which is not capable of accumulation. Domestic capital is negligible and the State has no profitable enterprises.

25. State revenues are derived exclusively from taxes and compulsory savings. These two kinds of income deprivation are, however, very limited and may only be applied after very careful consideration. Both diminish the demand for consumers' goods - which in poor and insufficiently organized countries is not always balanced by a growth of other kinds of demand - and endanger the desire to expand production as well as the adequate reproduction of labour power. Several countries it is true, possess certain reserves of

foreign currency, but these can not serve as a permanent foundation for accumulation policies. It is obvious that the governments of these countries cannot do without the credits based on bilateral inter--State agreements that are free of neo-colonialist tendencies, moreover the aid given by various international organizations /the World Bank, International Monetary Fund, etc./.

26. It would be appropriate for various study committees commissioned by the international organizations, to make recommendations on credit structures and special arrangements that would be flexibly adaptable to the economic conditions of the developing countries. A part of the loans granted to these countries does in fact conform to international usage, but the latter has been evolved in the mutual practice of the developed countries. It should be borne in mind that if foreign loans are obtained, the infra-structure has still to be built - generally by the borrowing country. This circumstance on the one hand imposes a formidable burden on the budget, while on the other hand creating considerable purchasing power for whose satisfaction further consumers' goods must be imported. The conclusion of this line of thought may be summed up in the statement that foreign credits cause inflationary tendencies within the country and promote indebtedness in international commerce. To forestall these processes it would be necessary to have foreign loans of a structure that would facilitate an increase in State revenues and prevent the deterioration of the balance of payments which appears as a subsidiary effect of investment schemes.

27. Probably those loans would be found to have the most favourable structure which can be devoted to the purchase partly of instruments of production and partly of consumers' goods. The consumers' goods must be sold on the domestic market and the returns thus obtained used to cover the costs of building the infra-structure. At the same time the sale of consumers' goods augments State revenues and relieves the burden on the balance of payments. This practice has to be continued until the opportunities for internal accumulation have improved and the construction of a more diversified domestic economy permits a considerable part of the consumers' goods to be produced by the country's own industries.

28. The question that has to be answered after an examination of the possibilities for accumulation is: how many percent of accumulation are needed to achieve a one percent growth of the national income? In practice this ratio has very different values. In India the proportion is of 1 to 2.5-2.8, in several African countries we find values of around 1 to 4 or 1 to 5. The divergences obviously arise from a number of sources:

a./ The ratio of productive investments is higher in some countries, lower in others. Yet it is only these that directly raise the national income.

b./ Differences may also be found in the composition of the infra-structure. Some countries have a relatively broad intelligentsia, while in others the training of highly qualified manpower can only now be begun, mostly under the guidance of foreign professors.

c./ The living standards /wage standards/ of the various countries show substantial differences.

d./ Differences subsist in the order of precedence and the realization of investment projects, in the degree of economic organization and effectiveness generally.

29.It would seem an obvious idea to raise the proportion of productive investments as opposed to the infra-structure. This, however, can only be done after very careful consideration, for in the developing countries the education of expert personnel, better training for the labour force and improvements in health standards are among the decisive conditions for raising the productivity of labour.

30.At any rate the differences in the ratios between increases of national income and the investments needed to achieve them, direct attention to an analysis of the methods and experiences of those countries that have been able to attain the more favourable figures. However, even if the most favourable ratios are considered, the necessary conclusion is that 15 percent accumulation is certainly needed if it is desired to secure a modest rise in the per capita national income where the population increase is of 2.5-3 percent.

31.The determination of the order of precedence of investments and the correct establishment of investment criteria are of decisive significance from the point of view of growth and of the development of a dynamic equilibrium. In practice the requirement for investments is in all expanding economies greater than the resources available, and in the economically undeveloped countries this stress and contradiction is even sharper.

32.Precedence decisions on investment projects and the determination of priorities, are therefore basic questions for any set of economic policies. The order of precedence primarily involves the distribution of the material resources available for investments among the various sectors of the economy. In the second phase, however, the technology of the actual investments must be selected. These two questions of course mutually influence one another, nevertheless the first is rather a matter for government decisions, while the second is more of concern at the level of concrete planning and realization.

33.In determining priorities, the point of departure is that industrialization is necessary, but that a consolidated increase in production capacities can primarily be achieved by developing the sectors of industry which make instruments of production. However, the path of industrialization may be different, depending on the concrete economic and social circumstances of each country. In the case of India, for instance, the direct approach to industrialization can be used, implying that a considerable part of the sums earmarked for accumulation must be directly invested in sectors producing instruments of production.

34.In the case of several other countries only the indirect path of industrialization is practicable. This means that those sectors must be developed which lead to an active balance of foreign trade, and the returns thus obtained must be used for the purchase of instruments of production which can process the country's raw materials to become finished products.

35.In both cases, however, attention must be devoted to the development of the consumers' industries, and particularly of agriculture, for if this is not done, disturbances of the equilibrium will arise which will hinder the consistent progress of industrialization.

In both cases it must be borne in mind that a rise in agri-

cultural productivity is a pre-condition of industrialization, from the point of view both of manpower and of consumption.

36. The choice of "investment criteria" is also connected with the sphere of economic decisions of political significance. Several authors - including Kahn, Galenson, Leibenstein, Eckstein, Tinbergen and others - have treated this problem. Eckstein, who holds a view substantially similar to Kahn's, recognizes that his analysis requires a mass of figures which cannot be available in the developing countries for a long time yet. Kahn incidentally stresses the consideration of marginal social productivity, saying that the output value arising through the investment must be diminished by the value that another use of the manpower needed for production would have yielded. It may thus be hoped, he contends, that the maximum product yield will be attained for the economy as a whole. In case of unemployment, however, the "missed opportunity" is zero, so that the model can not be used at the level of the national economy.

37. Other authors - including Tinbergen and Eckstein - propose the consideration of the "psychological discount", which is impossible to conceive on a social scale and in long-range planning.

Three things at any rate are evident:

a./ Those investments must be carried out which lastingly assure the greatest rise in national income. This means having modern technology /investments with a high capital intensity./

b./ On no account must an outdated technology be chosen in sectors of industry which influence the productivity of other sectors of industry or of agriculture, or are destined for export.

c./ Investments with a high labour intensity /not fully up to date technology/ may be temporarily considered in the local industries of densely populated countries /most of the underdeveloped countries are not in this category/, for instance by using textile machinery, weaving looms, etc. that have become obsolete elsewhere. Also in public works /road and bridge building, river regulation, etc./.

38. There can be no doubt, however, that the methods on whose basis the correctness of investment criteria should be decided have not yet been fully matured.

The fact is that it is also necessary to take into account the effect of the investments on the economy as a whole, independently of the form in which the advantages appear. It is possible that a particular enterprise will increase foreign currency revenues, but without these advantages appearing in the firm's accounts. It would only be possible to grade all projects on a single priority scale, if all the advantages could be enjoyed by the firm. Since this is patently impossible, it is obvious that the advantages, utility and costs to the people's economy of the investments must not fail to be evaluated, though this is attended by many difficulties.

39. The correct choice of development trends and of technology is complicated not only in industry but also in agriculture. The essence of the problem could be summed up as whether the agricultural techniques of the underdeveloped countries can progress along the "traditional" /i.e. the European/ path.

In Europe, during the space of more than a century, the earth was forced, frequently with arduous labour and at the cost of great sacrifices, to yield crops on bad soil, amid unfavourable circum-

stances. When the epoch of mass transport arrived, the good overseas soils poured forth their grain and high tariffs had to be introduced against foreign competition.

40. Now, on the other hand, in some of the developing countries the interests of supplying the indigenous population require that agriculture be diversified. There is no other choice, for the food balances of most countries already show a deficit while populations rise steeply.

It is also self-evident that where the soil and the precipitation and insolation figures favour the "traditional" agricultural technology, the maximum of development must be undertaken. But what is to be done in those regions where the traditional technology would require very great investments, high annual farming expenditures, and the yield would - as far as can be foreseen - be worse than middling?

41. Would it not be worth while to enlist the services of eminent experts and start experiments on an international basis and on a full farming scale to clarify these problems?

Should not an endeavour be made in precisely these regions to force the development of new agricultural techniques - all the more so as the tempestuous growth of mankind also requires them and as a considerable part of the forests ought for the time being to be preserved for climate regulation purposes?

42. Just to give an idea of the kinds of problem in which we think experiments on a farming scale should be carried out, they might include the growing of the traditional plant varieties /greens and fruits/ in nourishment-free media /water-sand and shingle cultures/ through the administration of nutrient solutions, the production of carbohydrates, fats and proteins for food by means of lower-order plants /algae/, chemical and radiation treatments to increase the growth energies and sizes of plants and animals, etc.

Of course care should be taken to avoid any unfounded steps. It would not, however, be taking a particularly great risk, if simultaneously with efforts made in areas favourable for the traditional agricultural technology, these internationally organized experiments on a farming scale were also begun.

43. It is the course of foreign trade /the balance of payments/ that is the main headache in securing a dynamic equilibrium.

Exports from most of the developing countries consist of a few foodstuffs and raw materials. It is a matter of common knowledge that the demand for foodstuffs on the world market is generally inelastic and that the demand for raw materials is also being reduced by the appearance of the various synthetics. On the other hand, due to the backwardness of the industries producing manufactured goods and the one-sided structure of agriculture, very many consumers' goods have to be imported. It is a familiar fact that all economic growth leads to increased import requirements not only in the investment sector, but also for consumption. Under these circumstances exports cannot be boosted to the extent that imports must rise.

44. At the same time the dependence particularly of the monocultural countries on the world market is truly staggering. There are many countries where foreign trade accounts for something like 60 percent of the national income /The total quotient of exports

and imports over the new value produced in one year/.

45. This figure, high in itself, is especially so if the level of economy and organization of these countries is considered. Yet another factor must also be taken into account in evaluating such ratios, viz. that those living in a subsistence economy remain completely outside the economic circulation. It therefore seems a more correct and realistic method for appraising the true weight of foreign trade to compare the total of exports and imports to the product quantity participating in economic circulation. This method yields results according to which the share of foreign trade in the product quantity participating in economic circulation is in several countries around 7o-75 percent.

There can be no doubt that it is this ratio which reflects the situation in its full complexity.

46. Added to this, the terms of trade have during the past ten years developed unfavourably from the point of view of the underdeveloped countries.

The population of these countries comprises 7o percent of the inhabitants of the non-Socialist world, but their share of industrial production is only 1o percent!

The share of the economically underdeveloped countries in the foreign trade of the non-Socialist world has also decreased.

In 1953 their share of exports was 28.4 percent, in 196o 24.2 percent. The corresponding figures for imports were 28.3 and 25.1 percent.

The situation of the non-oilproducing countries is particularly grave.

If exports from the developing countries in 1937/38 be taken as 1oo, then the index for 1955 is found to be 163.

On the other hand if the problem is examined by commodity groups, the following results are obtained:

Total exports for 1937/38	1oo
" " " 1955	163
Oil exports	385
Exports of mineral goods	158
Exports of tropical foodstuffs	113
Agricultural raw materials	1o6
Non-tropical foodstuffs	9o

Between 1952 and 1959 exports from the developing countries increased by 11 percent, the value of exports fell by 9 percent. The decrease in incomes from exports is $ 1.6oo million, serving the interests of a few great monopolist firms.

47. This picture, however, still fails to show the gravity of the situation for some countries. In Ghana for instance, taking export and import prices for 1954 to be 1oo, the index of export prices in 196o was 53, of imports 1o3! Most of the countries exporting foodstuffs are in a similar position!

48. Under such circumstances the purchasing power of these countries has dropped and they have had to reduce imports at a time when economic progress would have required a policy of expansion.

49. In order to change this situation, it is necessary to have

comprehensive international commodity agreements and guaranteed raw material prices. If this is not the case a few monopolies can cause grave damage not only to these countries, but to the whole of world trade and the world economy.

50. My paper has been concerned with the problems of planning in the economically underdeveloped countries. The problems of the plan, however, are the problems of economic reality and of life itself. The problems of these countries are for all their specific features, in their general aspects the problems of all progressive mankind. It is one of the decisive questions of our age to concentrate all our scientific and economic, intellectual and material resources on furthering the solution of these questions.

51. It is our political, economic and moral duty, our collective and individual task, for all of us according to our powers and abilities to participate in this work. It is most heartening to see and hear how many ideas and proposals representatives of the technical, agricultural and biological sciences have brought to this Conference. While paying due respect to their work, I would like to emphasize the special responsibility of the science of economics and of the economists in helping the underdeveloped countries and - further expanding the problem - in assisting the development of the world's economy. If we shall not prove able to synthesize the many sound technical and scientific recommendations to become the organic processes of live economies, then the many good ideas will become torsos or at best remain sparkling details, with no healthy effect on other processes.

52. For this reason we - together with scientists of other disciplines, but also separately - have great tasks ahead of us in accelerating economic growth, in rationally formulating a new international division of labour, in the equitable distribution of goods - generally in promoting modern developments to benefit the peoples and the whole of mankind.

Let us obey the dictates of our human and scientific consciences and carry out the tasks which history and this speeding age has set us!

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FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

SUMMARY

Agenda Item: H. .

Hungary

THE PROBLEMS OF PLANNING ECONOMIC GROWTH IN THE DEVELOPING COUNTRIES

By Dr. József BOGNÁR,
University Professor
Budapest, Hungary

Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

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No. 850 H.

The Problems of Planning Economic Growth in the Developing Countries

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Summary

Having won their national independence, the developing countries must proceed to establish the conditions for their economic growth. In so doing they strive to determine the aims and secure the means of their economic growth, in other words to plan their economic activities.

The object of all economic planning is to achieve the concentration and coherent utilization of the physical and intellectual resources in the given economy, so as to enable a rapid growth to take place that fully or almost satisfies the requirements of a dynamic equilibrium.

The economic factors however, are in practice intertwined with various political and social problems. For this reason these countries, with their one-sided /frequently monocultural/ food and raw material-producing economies, must:

a/ eliminate outdated social conditions /prefeudalism, feudalism, the cast system, tribal systems, etc./,

b/ deliberately construct a social and economic system that promotes the equitable distribution of goods, the establishment of economic and social equality, moreover the free development of the abilities of the individuals living and acting within that community.

It logically follows therefore that the trend and rate of economic progress cannot be determined by private profit, and that the social /State/ sector of the economy must - by degrees - acquire a dominant role in development. Only the new State power has the concrete ability to concentrate the available forces and to integrate the social and economic factors.

The planning of economic development and the realization of the flexibly administered plans meets with grave difficulties in the developing countries. The most decisive ones are:

a/ The inadequacy or lack of planning staffs and their relatively little experience.

b/ The uncertainty or lack of statistical data /demographic figures, industrial census, crop areas, etc./

c/ The relatively broad scope of natural economy; delay in the geological mapping of natural resources.

d/ The lack of experts familiar with economic planning.

Under such circumstances the question arises, of whether it is worth while and realistic to prepare a development plan.

On the grounds of theoretical and practical considerations it

is undoubtedly correct and necessary.

It may be possible to do without planning, but it is not possible to avoid taking economic decisions. This statement means that the administration is bound each day to adopt an attitude, to take the initiative and carry out changes, over a number of economic problems, in fact generally to make decisions. It is to be presumed that these decisions will be substantially better in possession of a coherent conception of economic policies - a plan is just such a conception expressed in figures and targets - than without one. Due to the deficiencies of the available facts and the lack of experience of the planning staffs, larger margins of error will be involved than in other countries. Deficient figures and inexperience, however, only make it more difficult, but not impossible to formulate a correct conception of economic policies. The margins of error arising from the lack of a comprehensive conception of economic policies at the level of Government decisions are greater than those due to the uncertainty of the figures and the inexperience of planning staffs.

The planning practice of the developing countries has mainly adopted medium-range plans /of 3 - 7 years/. However, it is also sound practice in the developing countries - once the initial difficulties involved in planning have been overcome - to prepare not only these "tactical plans" of economic development but also the "strategic plans". The Indian practice of elaborating not only five--year plans but also 25-30 year plans appears to be a very correct one.

The measure of success of the development plan is the extent and character of economic growth. Growth, however, can according to the statical approach objectively never be balanced. At the same time it also stands to reason that stable economic policies can not be based on a prolonged lack of equilibrium. For this reason the relation of the various factors to one another - considered in motion - is at least as important as the intrinsic content of the measures which influence the factors.

The requirement of a dynamic equilibrium means that a type of growth must be chosen which does not cause great and prolonged disturbances of the equilibrium.

One of the main problems of the economic life of the developing countries is the lack of accumulated reserves. The opportunities for accumulation are in the overwhelming part of the developing countries very limited, particularly in some African countries. It is obvious therefore, that the governments of these countries cannot do without the credits based on bilateral inter-State agreements, and aid given by various international organizations /the World Bank, International Monetary Fund, etc./.

The question that has to be answered after an examination of the possibilities for accumulation is: how many percent of accumulation are needed to achieve a one percent growth of the national income? Even if the most favourable proportions are considered, the necessary conclusion is that 15 percent accumulation is certainly needed if it is desired to secure a modest rise in the per capita

national income where the population increase is of 2.5 - 3 percent.

The determination of the order of precedence of investments is of decisive significance from the point of view of growth and of the development of a dynamic equilibrium. In the case of several countries only the indirect path of industrialization is practicable. This means that those sectors must be developed which lead to an active balance of foreign trade, and the returns thus obtained must be used for the purchase of instruments of production which can process the country's raw materials to become finished products. A rise in agricultural productivity is, however, at any rate a pre-condition of industrialization, from the point of view both of manpower and of consumption.

It is the course of foreign trade /the balance of payments/ that is the main headache in securing a dynamic equilibrium. Exports from most of the developing countries consist of a few foodstuffs and raw materials. At the same time the share of foreign trade in the national income is very great, so that the dependence particularly of the monocultural countries on the world market is truly staggering. Added to this, the terms of trade have during the past ten years developed unfavourably from the point of view of the underdeveloped countries. The purchasing power of these countries has dropped and they have had to reduce imports at a time when economic progress would have required a policy of expansion. In order to change this situation, it is necessary to have comprehensive international commodity agreements and guaranteed raw material prices.

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My paper has been concerned with the problems of planning in the economically underdeveloped countries. The problems of the plan, however, are the problems of economic reality and of life itself. The problems of these countries are the problems of all progressive mankind. It is one of the decisive questions of our age to concentrate all our scientific and economic, intellectual and material resources on furthering the solution of these questions. In all this, the greatest responsibility devolves on us, economists. Let us obey the dictates of our human and scientific consciences and carry out the tasks which history and this speeding age has set us!

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Agenda Item: H

Poland

OUTLINE OF A METHOD OF CONSTRUCTING A PERSPECTIVE PLAN BASED ON POLISH EXPERIENCE

By Professor Michal KALECKI, D.Sc.,
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OUTLINE OF A METHOD OF CONSTRUCTING A PERSPECTIVE PLAN

based on Polish experience

by Professor Michal Kalecki, D.Sc. Poland, Warszawa

I

1. Although this paper is based on the Polish experience in perspectiv planning it does not represent the official point of view on the subject. In the construction of the Polish twenty years plan a variety of approches were used and this happens to be one of them.

2. As the paper deals to a considerable extent with the problem of choice of the appropriate rate of growth of the national income it is necessary to say a few words about the concept in common use in the socialist countries which differs from that applied in the capitalist ones in that it excludes the production of services. It is true that the so called material services such as transport, laundry, restaurants and even trade are included. However the national income does not include the administrative services of the Government, entertainment, education, medical services etc. There also are excluded from the national income the services rendered by such fixed assets as residential houses, hotels etc.

3. I believe that for the purpose of long-run planning this approach has something to commend itself. It is easier to measure the real value of commodities than that of services. For instance, in the statistics of capitalist countries the real increase in administrative activities is measured by means of an index of employment of the officials /weighted according to the salaries in the base year/. No accounts is, and hardly could be, taken of changes in productivity of labour in this case.

4. For other reasons it is convenient not to include the residential rent in the national income. The capital coefficient is very high in this case and therefore the application of a general capital coefficient to the national income, in which residential rent is included, is fairly meaningless because the coefficient is very much influenced then by the relatives share of residential building in total investment.

5. Our approach does not mean, of course, that services should be neglected in the long-run planning. They are accounted for by appropriate planning of employment / for instance in the case of the administrative activities of the Government/or by planning of capacities of fixed assets of consumer type /e.g. dwelling space./

6. In line with the concept of national income used here we distinguish in investment the productive and uproductive investment. By productive investment we mean that destined for the production of goods and material services while other investment, such as construction of dwelling houses, streets, parks etc., is classified as unproductive investment.

7. Before proceeding with the subject proper it is still necessary to mention that in the Polish national planning no accrual of foreign credits is assumed. Such will be also our assumption in the subsequent discussion. This approach does not differ substantially from assumimg anaccrual of moderate foreign credits which are fixed beforehand in their amount. On the other hand, the difference between our approach and the assumption that any gap in foreign trade, however large, will be always covered by credits, it is crucial importance. For such an assumption would eliminate altogether the problem of balancing foreign trade which, as we shall see below, emerges as an essential factor in our approach to perspectiv planning.

II

8. The most important parameter of a long-run plan may be considered the average annual rate of growth of the national income. Thus the selection of the correct variant of the plan is really tantamount to a choice of the appropriate rate of growth of the national income. The Government has the natural tendency to develop the country as fast as possible, i.e. to fix the rate of growth at the highest possible level. There will be, however, a number of limiting factors which have to be taken into consideration here. The most obvious of these is the fact that the higher is the rate of growth the higher the relative share of productive investment in the national income. Indeed, the higher the increment of the national income at its given level the higher the investment which is necessary to achieve this increment / abstracting from utilization of the existing excess capacity/. It follows directly that the higher is the ratio of the increment of the national income to its level the higher the ratio of investment to the national income. Now, a higher relative share of productive investment in the national income will affect unfavourably consumption and unproductive investment in the short-run. This tendency obviously cannot be pushed too far because it would create dissatisfaction of the population eventhough in the long-run the cumulative effect of the high rate of growth contributes to an increase of the standard of living.

9. In many instances, however, the increase in the relative share of productive investment in the national income which accompanies the increase of the rate of growth is still enhanced by an additional factor. It appears, as will be shown in more detail below, that with the increase of the rate of growth there emerge difficulties in equilibrating the balance of trade. In its effort to achieve this equilibrium the country is forced down the path of investment requiring higher ca-

pital outlays in relation to the effect achieved in foreign trade and thus the relative share of productive investment in the national income /which we imagine to be adjusted for deterioration in the terms of trade/ will increase protanto more. It is very likely that at some level of the rate of growth balancing of foreign trade become an altogether impossible proposition and in this way there appears an absolute limit to the rate of growth.

10. Finally, at a sufficiently high rate of growth there may as well emerge a scarcity of labour. This can be overcome by increasing sufficiently the capital outlays in the plan but this will again aggravate the problem of the relative share of investment in the national income.

11. To sum up: the obstacles to a very high rate of growth in a perspectiv plan are the high capital outlay required both directly and as a result of the difficulties in equilibrating the balance of foreign trade and possibly also of the shortage of labour. In fact the difficulties in foreign trade may make virtually impossible exceeding a certain level of the rate of growth.

III

12. The first step in the construction of a perspective plan is to draw a crude outline of the plan assuming the rate of growth which is high in the light of the past experience of the country in question / falling such an experience in the light of experience of other countries in similar conditions/. We thus choose deliberately a high variant which it may be necessary to scale down already at the stage of preliminary testing.

13. Next, we have to make some assumption about the capital coefficient which relates the increment of the national income and productive investment. The value of the capital coefficient will have to be again chosen on the basis of past experience or the experience of other countries taking as much as possib under consideration the peculiar features of the period and the country in question. It is in any case impossible to have here anything but a crude approximation because the capital coefficient depends to a very great extent on the structure of the increment of output which may differ considerably from that in the past in another countries.

14. Now, having accepted some level of this coefficient for better or for worse we obtain the first approximation to the annual productive investment in the perspectiv plan, say. at its beginning, a its end, and in the middle of the plan. We handle in a similar way the problem of the coefficient relevant to the increase in inventories which enables us to determine this item. By deducting productive investment and the increase in inventories from the national income we determine finally the sum of consumption and unproductive investments.

15. In order to split this item into two components we have to compare the resulting standard of consumption of goods with the capacity of fixed assets yielding consumer services /e.g. with the per capita dwelling space in residential houses/. In this way it is possible to arrive at some reasonable decision which, however, would be bviously to a great extent arbitrary.

16. Already at this stage we may find out that the relative share of productive investment plus the increase in inventories in the national income is so high as to make the plan untenable because the inroads into consumption and unproductive investment would be too formidable in the short-run. However, since the result depends to a great extent on a level of a capital coefficient which is altogether hypothetical in character - it may be safer even in such a case to pursue the variant somewhat further.

IV

17. The next step is to establish at least in general lines the industrial structure of the national income. We have split the national income in the plan / i.e. at its beginning, at its end, and in the middle/ into four major components: productive investment, increase in inventories, unproductive investment and consumption. If we shall make still some reasonable assumptions about the future structure of consumption which may be based, for instance, on that of the more developed countries taking into consideration the local conditions of the country in question, we may proceed to a crude determination of the industrial structure. This is necessary for two reasons: for carrying out the test of the balance of trade and for obtaining a second approximation to the capital coefficient which would reflect the structure of the increment in output.

18. Here, however, an important distinction has to be made between two types of industries /including all branches of economic activity as agriculture, transport, etc./. We shall call these two categories supply determined and demand determined industries. By supply determined industries we mean such activities which have a certain ceiling for the long-run rate of growth for technical and organizational reasons, so that even a considerable increase in capital outlay will not be helpful in raising this output at a higher rate. The demand determined industries have no such ceilings, at least for the range of the rates of growth of the national income which come into consideration. Thus the output of such industries can increase in the long-run in accordance with demand.

19. The technological and organizational factors on which, in turn, depend the ceilings of the rate of growth of the supply determined industries are of a very vaaried nature. Limited natural resources are the simolest and most obvious example.

20. The time necessary for adaptation of new technological processes is another factor. The most serious diffficulties in the

way of introduction of new techniques are probably to be encountered in agriculture, where is always a certain element of spontaneity in the development of production. Even the amount of artificial fertilizers which can be profitably absorbed by agriculture is to a certain extent dependent on agrotechnical knowledge.

21. A futher factor impending development may arise from difficulties in recruiting manpower for certain trades / e.g. coal-mining/ or in making adequate progress in training of skilled technicians. Of particular importance can be the deficiency of technical and managerial personel indispensable for construction of new plant, which must be highly qualified and experienced. This is in fact the underlying factor of the adverse effect of the long period of construction on the rate of expansion of a particular industry.

22. With a given rate of investment in a particular industry, the number of establishments under construction is proportionate to the construction period. If this period is long and the rate of investment high, the number of "building sites" is so large that the existing highly qualified and experienced technical and organizational personnel cannot master them. If, in spite of that, the high rate of investment is maintained, the construction period becomes longer still, which results in freezing of capital rather than in accelerating expansion of the industry in question.

V

23. After this digression let us turn back to the determination of the industrial structure of the national income. Knowing the volume of productive and unproductive investment as well as of the increase in inventories; knowing moreover the volume and structure of consumption it is possible to make a rough estimate of the home demand for the products of the various branches of the national economy. This involves, of course, some knowledge of the technical coefficients of production with allowance for the future technical progress and also some decision as to the choice of technological variants / about the latter more will be said at the end of the paper/. Now, if the branch in question is supply industry, it can be ascertained how much of its produce is left for export or how much is necessary to import. In the import requirements there will be also obviously included commodities which cannot be manufactured at home at all. This determination will have to allow for possible home produced substitutes for imported materials.

24. In this way the first approximation to the total demand for imports will be established. And after deducting from their value that of exports provided out of the surpluses of the supply determined industries it may be found how much is still to be covered by the exports of the demand determined industries. Now, the production of these industries must be fixed in such a way that: a/ they should cover the home demand for their products, b/ the total of their contributions to exports should cover the remaining part of import requirements mentioned above. The total

of production of all branches of the national economy determined in this way of necessity equal to the national income. For it covers the demand generated by the four major home components of the national income either directly or by providing for exports which are required in order to cover the remainder of that demand by imports.

25. At this stage of argument it may be wondered whether a problem of equilibrium of the balance of trade really exists at all because it follows from above that the imports required are always automatically covered by exports if the total value of production equals the value of the home components of the national income. However, the equilibruim of the balance of trade arrived at in this way may be of no practical significance. It may be virtually impossible place the exports in the foreign markets at a scale corresponding to the export plans set out in a way described above. As a result of the pressure of the supply of the products in question their average prices may fall to such extent as to make it impossible to achieve the revenue of foreign exchange required for purchasing the necessary imports. Or even if it is possible to achieve this purpose, it will require very high capital outlays in relation to the effect in terms of foreign exchange, and as a result it will aggravate the problem of the relative share of investment in the national income / which, as said above, we imagine to be corrected for the deterioration in terms of trade.

26. If the country bases a part of its plan for foreign trade on long-term agreements, it will be again possible to place in these agreements only limited quantities of goods available for export. It should be noted, however, that long-term agreements have a considerable advantage over "normal" trade in making at least a part of the plan for foreign trade independent of the changes in international economic situation.

27. It is from point of view of practical implementation that the plan for exports must be examined. If it proves unrealistic it is clear that the rate of growth has to be scaled down. It should be added that the scaling down of the rate of growth, while maintaining unchanged the development of supply determined industries, will contribute considerably to the restoration of the equilibrium in the balance of trade. For this will cause a relatively steep reduction in the demand for imports and possibly also a steep increase in surpluses of the supply determined industries available for export.

28. If, on the other hand, the plan for foreign trade proves to be fairly realistic, it is still necessary to ascertain the influence of the expansion of exports upon the capital outlays.

VI

29. Finally, before making an estimate of the necessary investment, the balance of supply of and demand for labour has to be considered. For this purpose a forecast of supply of labour based on demografic considerations has to be made. Moreover, on the basis of the industrial structure of the national income, the demand for labour is to be approximately ascertained allowing for the increase in productivity resulting from technical progress. It should be noticed that in estimating the demand for labour in agriculture the

peculiar problems involved are to be taken into consideration.

30. If the comparison between the demand for and the supply of labour leads to the conclusion that at the assumed rate of growth a labour shortage will be imminent, it is necessary to assume in the plan more mechanization and modernization which will, of course again lead to higher investment outlays. It should be noticed that this problem is less likely to arise in underdeveloped countries than that of the difficulties in balancing foreign trade.

VII

31. Now, having estimated the industrial structure of the national output and also being familiar with the impact that difficulties in foreign trade and possibly also the shortage of labour exercise upon the capital outlays - we can proceed with estimating again the total productive investment. This estimate may differ considerably from the first one made on the basis of a hypothetical capital coefficient. It may occur that eventhough it is within practical possibilities to achieve the equilibrium in the balance of trade at the assumed rate of growth the ralative share of productive investment in the national income at which may prove intolerable. We have then to reduce somewhat the rate of growth and examine the new variant in the way described above.

32. The variant finally adopted should be distinguished by the highest possible rate of growth at which there is a realistic possibility of balancing foreign trade and at which the relative share of productive investment plus the increase in inventories in the national income considered tolerable by the authorities from the point of view of the impact upon consumption and unproductive investment in the short-run.

VIII

33. It has been mentioned above that in the course of ascertaining the demand for products of single industries generated by the home components of national income the problem of choosing between various technological alternatives will be encountered. As an example may be quoted the choice between electrification or dieselization of railways depending on the load of traffic on a given line. In order to settle such problems it is necessary to have a method for comparing the efficiency of two technological alternatives of producing the same final effect. Such methods have been in fact developed in Poland as well as in other socialist countries.

34. A similar problem arises in connection with various possibilities of earning foreign exchange by means of exports or substituting home production for imports. For the purpose of comparing various alternatives of earning one dollar in foreign trade there may be applied the same method as for comparing technological alternatives for achieving the same final productive effect.

35. It should be added, however, that the importance of such efficiency calculations for the determination of the structure of exports is reduced by two factors: a/ the existence of supply determined industries, and b/ the imperfection of foreign markets. In deed, it is impossible to concentrate on the most favourable ex-

ports because the development of the production of the goods in question may be limited by technical or organizational factors, or because placing these goods in the foreign market is impossible in large quantities without reducing their price which would make invalid the results of calculation of efficiency of investment based on given world prices. In this way the planner who has made the most of the profitable exports must also put up with the less efficient export alternatives.

36. It should be added that the calculation of efficiency should be applied as thouroughly as possible for the purposes mentioned above, and such is the case in Poland and other socialist countries. On the other hand, there is no point in applying them for anything else but the choice of technological alternatives or for the examination of the structure of foreign trade.

37. The structure of output in a planned economy cannot be determined apart from these two aspects by considerations of efficiency. Indeed, in an economy which would be closed and where only one method of achieving a given final productive effect were available, the calculation of efficiency would be out of place. For, as follows from the above arguments, with a given rate of growth of the national income, a given relation between unproductive investment and consumption, and a given structure of consumption - the industrial structure of the output would be fully determined by the technical coefficients of production.

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SUMMARY

Agenda Item: H Poland

OUTLINE OF A METHOD OF CONSTRUCTING A PERSPECTIVE PLAN BASED ON POLISH EXPERIENCE

By Professor Michal KALECKI, D.Sc.,
Poland, Warszawa

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OUTLINE OF A METHOD OF CONSTRUCTING A PERSPECTIVE PLAN

based on Polish experience

by Professor Michal Kalecki, D.Sc. Poland, Warszawa

Summary:

1. Taking the rate of growth of the national income as the basic parameter of a perspective plan it is suggested that the construction of the plan should start from a variant characterized by a high rate of growth. The variant may prove untenable for various reasons. /a/ The higher the increment of the national income at its given level the higher the investment which is necessary to achieve this increment. However, a high relative share of investment in the national income will affect unfavourably consumption in the short period eventhough in the long-run the cumulative effect of the high rate od growth contributes to an increase in the standard of living. /b/ With a high rate of growth there emerge usually difficulties in equilibrating the balance of trade. These difficulties will aggravate the problem of the relative share of investment in the national income /which is meant to be adjusted for the deterioration in terms of trade/; they may even make the balancing of foreigntrade practically impossible. /c/ Finally there may emerge in some instances a scarcity of labour. This will make necessary an effort to save labour by means of mechanization and modernization which will require additional capital outlays and thus again aggravate the problem of the relative share of investment in the national income.

2. If the "high" variant proves untenable because of practical impossibility to balance foreign trade or because of a relative share of investment in the national income which is considered intolerable by the authorities it will be necessary to consider a variant with a lower rate of growth.

3. In the testing of the variants it is necessary to determine roughly the industrial structure of aggregate demand and aggregate output. This is indispensable for the examination of the problem of the balance of foreign trade as well as for checking the first estimate of investment which is based on a hypothetical capital coefficient. In the determination of the structure of demand and oputput considerations of efficiency are involved in two ways: /a/ the choice between two or more technological alternatives of achieving the same productive effect /b/ the choice between various alternatives of aerning foreign exchange by means of exports or substituting home production for imports.

4. The structure of output in a planned economy cannot be determined apart from these two aspects by consideration of efficiency. Indeed, in an economy which would be closed and where only one method of achieving a given productive effect were available, the calculations of efficiency would be out of place; because with a given rate of growth of the national income and a given structure of future consumption the industrial structure of output would be fully determined by the technical coefficients of production.

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Agenda Item: H.3

Czechoslovakia

WORKERS' PARTICIPATION IN PLANNING AND MANAGING THE NATIONAL ECONOMY

By Josef JIRASEK,
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Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

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WORKERS' PARTICIPATION IN PLANNING AND MANAGING THE NATIONAL ECONOMY

Josef Jirásek
Head of the Production Department
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1. The constant development of production forces calls for systematic improvement in managing the national economy. The growing concentration and specialisation of production requires a form of management which ensures the best co-operation and smooth running of all production processes and economic relations. In a socialist society this co-operation is achieved by the State through a centralised economic plan. Within the comprehensive plan, the economic independence and rights of the local organs and enterprises are constantly being expanded and at the same time the initiative of the workers, freed from capitalist exploitation, is being encouraged. This initiative is an active factor in working out, realising and controlling the comprehensive national economic plan.

2-a/ The workers participation in the management of the national economy is one of the main principles of the socialist society. It stems for the very position of the worker in industry and society. Under socialism workers are the owners of the means of production. This fact is reflected in their efforts to improve the results in the national economy.

b/ Participation in the management, planning and control is laid down in the law, and primarily in the Constitution of the Czechoslovak Socialist Republic. Article 12, para. 1 of the Constitution reads: "The entire national economy is directed by a State plan of development, worked out and achieved with active participation of the workers."

3-a/ It is the task of the Revolutionary Trade Union Movement to organise workers' participation in directing and controlling the national economy.

b/ It is the duty of economic organs at all levels, from enterprise management up to the ministry, to present draft plans to the trade union organisation concerned, take in its views and closely co-operate with it to ensure fulfilment of the plan. The Works' Committee of the Revolutionary Trade Union Movement /ROH/ takes part in the preparation of all plans of the enterprise, in its distribution and control. Questions connected with the plan, as for instance the allotment of the wage fund and bonuses, working hours, etc., are directly decided by the ROH Works' Council on behalf of the workers together with the management of the enterprise.

c/ In establishing the plan, the trade union organisation acting as representative of all workers in the State sees to it that the draft plan of the factory, enterprise and economic production units is in harmony with the interests of the State and the workers and meets the needs of the entire national economy. It makes sure that factories and enterprises do not confine themselves to their own local enterprise interests.

d/ The Trade Union organisation sees to it that the welfare extended to the workers corresponds with the planned development of production, within the actual means of the factories and enterprises. Measures taken to ensure production must also correspond to the needs of the workers who are fulfilling planned quotas.

e/ The Factory Committee organises meetings and conferences, where the draft plans are discussed and proposals and observations put forth. Important proposals are incorporated into the plan, while those of lesser scope are carried out directly in the workshops and factories.

f/ Inseparably connected with planning is the timely and correct distribution of the plan. Uniform distribution of the plan helps to

ensure a continued flow of production and a fuller use of the initiative of the workers.

g/ Workers, through their Trade Union organisation, take part also in controlling the fulfilment of the plan. A regular control is carried out every month, three, six and 12 months.

4-a/ There are many different forms of the active participation of the workers in directing, especially preparing, fulfilling and controlling the plan. The most widely used is socialist emulation. More than 80% of all workers in the Czechoslovak Socialist Republic are taking part in various forms of socialist emulation, from individual competition up to the "socialist labour teams". A great number of workers participate in the competition, as they realise that their efforts are not for individual gain, but benefit all the workers and that the better the results achieved are, the sooner their standard of living will raise.

b/ Well organised socialist competition yields good economic results, brings out hidden reserves and increases productivity of work. The fulfilment and over-fulfilment of the plan through competition ensure ever increasing wages, the improvement of working, social, cultural and health conditions.

c/ Socialist competiton does not mean increased work load. At present such forms of socialist competition are used to improve the quality of products and to achieve better economic results through the effective use of machinery and equipment, saving of material introduction of new techniques and technology. It also stimulates the efforts of the workers to constantly raise their qualifications, master their trades and increase their economic knowledge. Not less important is the educational influence of competition; the workers pledge themselves to take up functions in various social organisations and to help each other during work and after.

5. Another effective form of direct participation of the workers in the preparation and management of the plan are the technical-economic conferences. These are meetings of workers, shock workers, technicians, engineers and scientists of the whole enterprise who discuss important problems bearing on the development of the entire enterprise or factory. In these meetings the production experiences of the workers are fully utilized. Delegates in these conferences and in membership meetings of the ROH discuss the problems submitted at their place of work by their co-workers and suggest to the conference their ideas and suggestions for the solution of these problems. The decisions of the technical-economic conference are binding for the management in the factories and the enterprise and there are set deadlines for their implementation.

6. One of the most widely extended formsof workers participation in management are production meetings convened by the trade union organisation in the workshop and in the place of work. At these production meetings all workers help to solve problems and decide on suggestions which are decisive for the establishment and realisation of the mobilisation plans. The questions discussed at these production meetings are those concerning the workers and which will help to solve problems of the working place or workshop concerned. Whether this form is effective depends upon how ideas and suggestions of the workers are being used and realised in the production process. Production meetings are called in groups, workshops, in factories and enterprises. It is the duty of the management to carry out the suggestions of the workers.

7-a/ The high rate of development of the national economy in the ČSSR is more and more ensured by utilising and introducing new technical methods, technology and organisation of production, i.e. by the continuous increase of the social productivity of work. Those who introduce, enlarge and use new technical methods are mostly inventors, improvers and innovators. The trade union organisation helps the creative interest and faculty of hundreds of thousands of inventors and innovators to solve important problems of production by asking the management of the enterprise to put forward concrete tasks which represent part of the preparation and establishment of the plan.

b/ Tasks are to be based upon the concrete needs of the factory, workshops and working places and are to be in close connection with the tasks which the enterprise will have to fulfil in the coming year. In order to stimulate whole collectives interest, of inventors and innovators to solve important technical problems, the trade union organisation organises a competition for the best solution of the individual thematic tasks. If certain problems cannot be solved by individuals because of lack of strength and ability, innovators, best workers and technicians work in teams.

8. An important method to ensure the participation of the workers in directing and planning of the national economy is membership meetings of trade union groups, shop organisations and the factory organisation ROH. During the period of preparation and establishment of the plan and during the fulfilment of the plan, the trade union organisation submits to the membership meetings important questions in connection with the ensuring of the further development of production, and the development of the enterprise as a whole or of individual shops. At membership meetings workers are being acquainted with the problems and submit their suggestions and ideas. The draft plan of the factory has to be discussed at membership meetings before being finally adopted.

9-a/The most important method of control of the economy and the ensuring of the effectivity of production, based upon participation of the workers, technicians and all workers are complex analyses of the economic activity of the enterprise and all branches. The main direction of the complex analysis is discussed by the ministry of finance with the Central Council of Trade Unions and by the other ministries with the respective trade unions.

b/ Complex analyses of the economic activitiy carried out every month, three months and 12 months at the individual places of work, in the workshops and factories with the ective participation of all workers. The analysis of the fulfilment of the plan concerns mainly economy, higher productivity of work and the reduction of costs. Workers and trade union organisations together with the management evaluate whether the enterprise kept to the fixed norms, es-

pecially norms determining the development of avarage wages and assignment to the bonus fond. Great attention is given to the ways and means by which the enterprise fulfilled assigned tasks, especially whether it did not make profits by incorrect methods, i.e. whether it cared for the correct maintenance of basic funds, quality and assortment of products or whether it concentrated upon an assortment advantageous for the enterprise, but undesirable from the standpoint of the needs of the national economy, whether it adhered to the principles of work safety, etc.

c/ In ensuring the participation of the workers in the complex analysis the Revolutionary Trade Union Movement gives special attention to setting and maintaining prices. The Commission of Production of the Factory Committee ROH and the Factory Committee itself see to it that the price for a new product is adequate, that there are no un-economical changes of material in production which would increase the price and hurt the consumer. Inadequate prices are discussed in trade union organs and then the management is requested to correct them.

d/ Analyses of economic activity are important for two reasons: they representa certain control of economy and the same time on the basis of this control, measures are taken for the next period.

10-a/ Collective agreements are playing a great organisational and educational role in fulfilling economic plans and continuously improving production.

b/ They play also an important role in developing a greater participation of the workers in the direction of production. In the collective agreement the relation of the directing organs and the workers and their trade union organisation in the production process is reflected. Collective agreements under socialism mean commitments on both sides. They are concluded between the workers, represented by the trade union organisation, and the management of the enterprise for the fulfilment and over-fulfilment of the production quotas and concrete measures concerning the welfare of the workers in the enterprise. It links just demands and satisfies the needs of the workers in harmony with the interests of socialist construction.

c/ Collective agreements are concluded in all factories and enterprises. It is the common task of the management and the trade union organs to establish them. The tasks of trade union organs in the enterprise and factory in the conclusion of the collective agreements are set by the Central Council of Trade Unions in agreement with the decisions of the IVth All-Trade Union Conference. The decisions of the IVth All-Trade Union Conference, which have been adopted as law by the National Assembly, are also binding for the management and it is the duty of production units to conclude a collective agreement with basic trade union organisations.

11-a/ The Budget of the Work's Funds is included in the collective agreement. The Work's fund is an important link in the system of material stimulis and a form of collective material interest of workers in the good economy of the enterprise.

b/ On resolutions of the membership meeting of the trade union organisation the work funds is used for:

- cultural, social, health and sport purposes, especially for investments of permanent value and the grant of contributions and loans for housing construction;

- scholarships to employees of the enterprise;

- rest in recreational centres and spas;

- collective and individual non-monetary rewards of workers of the enterprise for exceptional work achievement especially through socialist competition, the innovators' and inventors' movement, creative participation in the direction of the enterprise and solution of production problems.

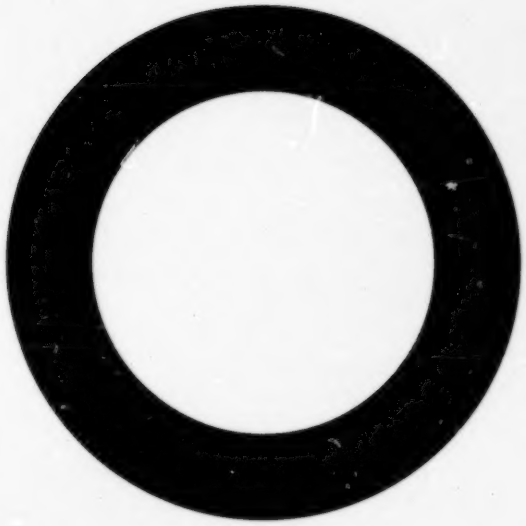
c/ The trade union organisation has the right to decide on the use and control of the budget. During the year it regularly reports to the workers and presents the results of economising with the funds for discussion.

The main source of income for the work's funds is the saving done

by the enterprise. Every 3 and 12 months the ministry concerned allots to the fund a share of the enterprise's income based upon its economic achievements. If the enterprise overfulfils its quota the share of their workers' fund is larger, but if the plan is not fulfilled, the share is smaller.

The fund is an effective means to develop the creative initiative of the workers and to increase their participation in the direction of the enterprise. In our experience works' funds proved to be useful to stimulate the material interest of workers and technicians for the fulfilment and over-fulfilment of production tasks. At the same time they are an important means of financing activities an the interest of the workers.

We showed several main forms of direct workers' participation in the direction of the national economy. With the development of socialist society, new forms will always be created in accordance with the standard of organisation and direction. It is at the same time the expression of ever greater democratisation of the socialist society.



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SUMMARY

Agenda Item: H.3

Czechoslovakia

WORKERS PARTICIPATION IN PLANNING AND MANAGING THE NATIONAL ECONOMY

By Josef JIRÁSEK,
Head of the Production Department
of the Central Council of Trade Unions,
Czechoslovakia

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Workers' Participation in Planning and Managing the National Economy

Josef Jirásek,
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of the Central Council of Trade Unions,
Czechoslovakia

SUMMARY

In a socialist society the development of productive forces is ensured through unified economical planning and its fulfilment is ensured through the participation of the masses of workers.

The means of production in a socialist society are owned by the workers and thus their position in the socialist and production process is determined. The tasks of the trade unions and the activities of their organs in a socialist society lie in ensuring the participation of the workers in the management, in planning and control of the tasks set by the economical plan and in the systematic care of the many-sided needs of the workers.

During all stages of working out an allocation of the plan the workers fully participate. Their participation is guaranteed in all stages of the management of the national economy through the constant control of the planned tasks. These activities are ensured and applied through the intermediary of production conferences, plenary meetings, technical and economical conferences and through complex analyses of the economical situation of enterprises, plants and other economical organisations.

The significance of inventors, innovators and complex brigades

lies in the setting and application of thematic tasks, the implementation and the introduction of the new techniques, technology and the organisation of the production.

The care of the workers and their welfare is ensured through Collective Agreements and financed through the workers' enterprise funds. The workers participate in the preparation and signing of the Collective Agreements as well as the application of the workers enterprise funds, which is carried out under direct control of the workers.

The trade unions supervise the fulfilment of the production tasks and that they are in accordance and harmony with the systematic care of man, of his health, his work safety and of his other interests of life and cultural needs.

In connection with the systematic development of socialist democracy and with the participation of the people in the administration of the state, new and better forms for the participation of the workers in the administration and the planning of economy are being developed.

Continuously our workers send a great many suggestions and proposals for improvement of the application and the planning of the national economy.

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